

**SPEC. NO.:** PS-53014-002XX-XXX

**REVISION:** C

**PRODUCT NAME:** I/O STANDARD BATTERY HOLDER SMT 2P

**PRODUCT NO:** 53014-002XX-XXX / 53011-002XX-XXX / 54983-002XX-XXX  
54986-002XX-XXX

|  |   |   |
|--|---|---|
| <b>APPROVED:</b><br><br>Liang,lin ji<br><br><b>DATE:</b><br>2017/10/23 | <b>CHECK:</b><br><br>Lu,jing quan<br><br><b>DATE:</b><br>2017/10/23 | <b>PREPARED:</b><br><br>Hsieh,fu yu<br><br><b>DATE:</b><br>2017/10/23 |
|--|---|---|

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Aces P/N: **53014/53011/54983 /54986series**

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## 1 Revision History

| Rev.     | ECN #              | Revision Description                          | Prepared            | Date              |
|----------|--------------------|---|---------------------|-------------------|
| 1        | ECN-1112561        | PROPOSAL                                      | WENDE               | 2011/12/30        |
| O        | ECN-1211237        | RELEASE                                       | XIAOXIONG           | 2012/11/27        |
| A        | ECN-1401271        | ADD Working Voltage                           | LIUJINLAN           | 2014/01/18        |
| B        | ECN-1706304        | ADD 54983 series and Terminal retention force | XIAOXIONG           | 2017/04/14        |
| <b>C</b> | <b>ECN-1710290</b> | <b>ADD 54986 series</b>                       | <b>Liang,lin ji</b> | <b>2017/10/23</b> |
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## 2 SCOPE

This specification covers performance, tests and quality requirements for **I/o standard battery holder smt type**.

## 3 APPLICABLE DOCUMENTS

EIA-364: ELECTRONICS INDUSTRIES ASSOCIATION

## 4 REQUIREMENTS

### 4.1 Design and Construction

- 4.1.1 Connector shall be of the design, construction and physical dimensions specified on the applicable sales drawing.
- 4.1.2 All materials conform to R.o.H.S. and the standard depends on TQ-WI-140101.

### 4.2 Materials and Finish

- 4.2.1 Contact: High performance copper alloy  
Finish: **Pls. refer to the drawing.**
- 4.2.2 Housing: Thermoplastic or Thermoplastic High Temp., UL94V-0

### 4.3 Ratings

- 4.3.1 Working Voltage Less than **36 Volts AC (per pin)**
- 4.3.2 Voltage: **250 V AC (per pin)**
- 4.3.3 Current: **3.0 Amperes (per pin)**
- 4.3.4 Operating Temperature : **-40°C to +85°C**

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## 5.1. Test Requirements and Procedures Summary

| Item                              | Requirement  | Standard   |
|-----------------------------------|--|--|
| Examination of Product            | Product shall meet requirements of applicable product drawing and specification.                                       | Visual, dimensional and functional per applicable quality inspection plan.   |
| <b>ELECTRICAL</b>                 |  |  |
| Item                              | Requirement  | Standard   |
| Low Level Contact Resistance      | <b>50 m <math>\Omega</math></b> Max.(initial)per contact<br><b><math>\Delta R</math> 50 m <math>\Omega</math></b> Max. | Mate connectors, measure by dry circuit, <b>20mV</b> Max., <b>100mA</b> Max.<br>(EIA-364-23)   |
| Insulation Resistance             | <b>1000 M <math>\Omega</math></b> Min.   | Unmated connectors, apply <b>500 V</b> DC between adjacent terminals.<br>(EIA-364-21)  |
| Dielectric Withstanding Voltage   | No discharge, flashover or breakdown.<br>Current leakage: <b>1 mA</b> max.   | <b>1000 V</b> AC Min. at sea level for <b>1</b> minute. Test between adjacent contacts of unmated connectors.<br>(EIA-364-20)  |
| Temperature Rise                  | <b>30<math>^{\circ}</math>C</b> Max. Change allowed  | Mate connector: measure the temperature rise at rated current until temperature stable. The ambient condition is still air at <b>25<math>^{\circ}</math>C</b><br>(EIA-364-70 METHOD 1,CONDITION 1) |
| <b>MECHANICAL</b>                 |  |  |
| Item                              | Requirement  | Standard   |
| Durability                        | <b>20</b> cycles.  | The sample should be mounted in the tester and fully mated and unmated the number of cycles specified at the rate of <b>25.4 <math>\pm</math> 3mm/min.</b>   |
| Terminal /Housing Retention Force | <b>0.8kgf</b> MIN.   | Operation Speed :<br><b>25.4 <math>\pm</math> 3</b> mm/minute.<br>Measure the contact retention force with tester.   |

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| Vibration          | 1 $\mu$ s Max. | The electrical load condition shall be 100 mA maximum for all contacts. Subject to a simple harmonic motion having amplitude of 0.76mm (1.52mm maximum total excursion) in frequency between the limits of <b>10 and 55 Hz</b> . The entire frequency range, from <b>10 to 55 Hz</b> and return to <b>10 Hz</b> , shall be traversed in approximately 1 minute. This motion shall be applied for 2 hours in each of three mutually perpendicular directions.<br>(EIA-364-28 Condition I) |
| Shock (Mechanical) | 1 $\mu$ s Max. | Subject mated connectors to <b>50G's</b> (peak value) <b>half-sine</b> shock pulses of <b>11</b> milliseconds duration. Three shocks in each direction shall be applied along the three mutually perpendicular axes of the test specimen (18 shocks). The electrical load condition shall be 10mA maximum for all contacts.<br>(EIA-364-27, test Condition A)  |

**ENVIRONMENTAL**

| Item                                       | Requirement   | Standard   |
|--|---|--|
| Resistance to <b>Reflow</b> Soldering Heat | See Product Qualification and Test Sequence Group <b>10 (Lead Free)</b> | Pre Heat : 150°C~180°C, 60~120sec.<br>Heat : 230°C Min., 40sec Min.<br>Peak Temp. : 260°C Max, 10sec Max.  |
| Thermal Shock                              | See Product Qualification and Test Sequence Group <b>4</b>              | Mate module and subject to follow condition for 5 cycles.<br>1 cycles:<br>-55 +0/-3 °C, 30 minutes<br>+85 +3/-0 °C, 30 minutes<br>(EIA-364-32, test condition I) |
| Humidity                                   | See Product Qualification and Test Sequence Group <b>4</b>              | Mated Connector<br>40°C, 90~95% RH,<br>96 hours.<br>(EIA-364-31,Condition A, Method II)  |
| Temperature Life                           | See product Qualification and test sequence group <b>5</b>              | Subject mated connectors to temperature life at <b>85°C</b> for <b>96 hours</b> .<br>(EIA-364-17, Test condition A)  |

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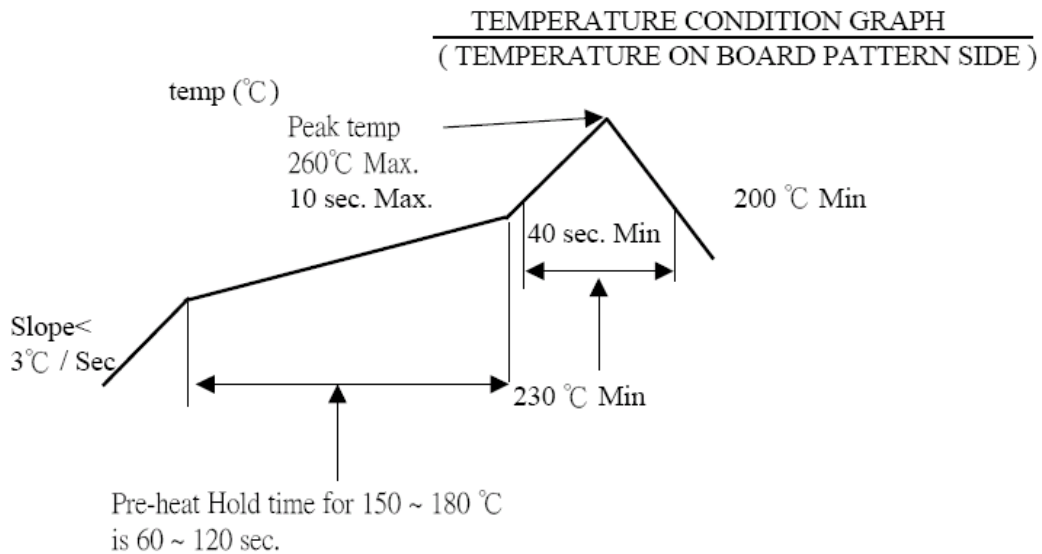
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|                                       |  |  |
|---------------------------------------|--|--|
| Salt Spray<br>(Only For Gold Plating) | See Product Qualification and Test Sequence Group 6  | Subject mated/unmated connectors to 5% salt-solution concentration, 35°C<br>(I) Gold flash for 8 hours<br>(II) Gold plating 5 u" for 96 hours.<br>(EIA-364-26) |
| Solder ability                        | Tin plating:<br>Solder able area shall have minimum of 95% solder coverage.<br>Gold plating:<br>Solder able area shall have minimum of 75% solder coverage | And then into solder bath, Temperature at 245 ±5°C, for 4-5 sec.<br>(EIA-364-52)   |
| Hand Soldering Temperature Resistance | Appearance: No damage  | T ≥ 350°C, 3sec at least.  |

**Note.** Flowing Mixed Gas shall be conduct by customer request.

## 6 INFRARED REFLOW CONDITION



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## 7 PRODUCT QUALIFICATION AND TEST SEQUENCE

| Test or Examination                   | Test Group    |     |     |      |     |     |   |     |   |    |
|---------------------------------------|---------------|-----|-----|------|-----|-----|---|-----|---|----|
|                                       | 1             | 2   | 3   | 4    | 5   | 6   | 7 | 8   | 9 | 10 |
|                                       | Test Sequence |     |     |      |     |     |   |     |   |    |
| Examination of Product                | 1,3           |     |     | 1,7  | 1,6 | 1,4 |   | 1,4 |   |    |
| Low Level Contact Resistance          |               | 1,3 | 1,4 | 2,10 | 2,9 | 2,5 |   | 2,5 |   |    |
| Insulation Resistance                 |               |     |     | 3,9  | 3,8 |     |   |     |   |    |
| Dielectric Withstanding Voltage       |               |     |     | 4,8  | 4,7 |     |   |     |   |    |
| Temperature Rise                      | 2             |     |     |      |     |     |   |     |   |    |
| Durability                            |               | 2   |     |      |     |     |   |     |   |    |
| Terminal / Housing Retention Force    |               |     |     |      |     |     |   |     |   | 1  |
| Vibration                             |               |     | 2   |      |     |     |   |     |   |    |
| Shock(Mechanical)                     |               |     | 3   |      |     |     |   |     |   |    |
| Resistance to Soldering Heat          |               |     |     |      |     |     |   | 3   |   |    |
| Thermal Shock                         |               |     |     | 5    |     |     |   |     |   |    |
| Humidity                              |               |     |     | 6    |     |     |   |     |   |    |
| Temperature Life                      |               |     |     |      | 5   |     |   |     |   |    |
| Salt Spray(Only For Gold Plating)     |               |     |     |      |     | 3   |   |     |   |    |
| Solder ability                        |               |     |     |      |     |     | 1 |     |   |    |
| Hand Soldering Temperature Resistance |               |     |     |      |     |     |   |     | 1 |    |
| Sample Size                           | 2             | 4   | 4   | 4    | 4   | 4   | 4 | 4   | 4 | 4  |